DAVID G. REICHERT
8TH DISTRICT, WASHINGTON

COMMITTEE ON WAYS AND MEANS
SUBCOMMITTEE ON TRADE
SUBCOMMITTEE ON OVERSIGHT
SUBCOMMITTEE ON SOCIAL SECURITY

WASHINGTON OFFICE:
1730 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-4708
TELEPHONE: (202) 225-7761
FAX: (202) 225-4282

DISTRICT OFFICE:
2737 78TH AVENUE, SE, SUITE 202
MERCER ISLAND, WA 98040
TELEPHONE: (206) 275-3438
TOLL FREE: (877) 920-9208
FAX: (206) 275-3437
www.house.gov/reichert

Congress of the United States
House of Representatives
Washington, DC 20515–4708

April 2, 2009

The Honorable David Obey
Chairman
House Appropriations Committee
H-218, The Capitol
Washington, DC 20515

The Honorable Jerry Lewis
Ranking Member
House Appropriations Committee
1016 Longworth House Office Building
Washington, DC 20515

Dear Chairman Obey and Ranking Member Lewis:

I am requesting funding in the FY 2010 Energy and Water Development Appropriations bill, EERE Account for hydrogen technology. The entity to receive funding for this project is Asemblon, Inc., located at 15340 NE 92nd Street, Suite B, Redmond, WA 98052. The funding would be used for technology that would allow hydrogen to be transported in liquid form and used in gasoline infrastructure. I certify that neither I nor my spouse has any financial interest in this project.

I hereby certify that this request will be made publicly available on my Official Website as required by Chairman Obey's new Committee policy that only posted requests will be considered.

Consistent with the Republican Conference's policy on project requests, I hereby certify that to the best of my knowledge this request: (1) is not directed to an entity or program that will be named after a sitting Member of Congress; (2) is not intended to be used by an entity to secure funds for other entities unless the use of funding is consistent with the specified purpose of the earmark; and (3) meets or exceeds all statutory requirements for matching funds where applicable. I further certify that should this request be included in the bill, I will place a statement in the Congressional Record describing how the funds will be spent and justifying the use of federal taxpayer funds.

Sincerely,

D. Reichert

DAVID G. REICHERT
Member of Congress

OFFICE OF CONGRESSMAN DAVE REICHERT (WA-08)

PROJECT REQUEST CERTIFICATION

By submitting this request for Federal funding, I certify that:

- This project directly benefits the residents of Washington's Eighth Congressional District and merits federal funding assistance.
- None of the funds requested will be used for a new building, program, or project named after a sitting Member of Congress.
- None of the funds requested will be used to secure funds for other entities unless the use of funding is consistent with the specified purpose of the project request.
- For requests where the receiving entity is not a unit of federal, state, or local government, or where the entity receiving the funding will not be providing support to a federal, state, or local government, or will not be providing research, the organization will provide matching funds, including in-kind contributions of 5% or more above the statutory requirement.
- For requests from non-federal, -state, or -local government entities or other public institutions, the organization will submit an End User Letter(s) of Support from a public official representing the direct beneficiaries of the project. This will be inserted into the Congressional Record and disclosed on the Member's Congressional Website.
- Under separate cover, I agree to provide a comprehensive plan outlining the sources of funding for the duration of the project; the percent and source of required matching funds, anticipated sources of the funding for the duration of the project, and a detailed budget for how federal funding assistance will be used to support the project.
- In the interest of transparency, any information submitted with this project request may be disclosed for public review, including but not limited to the Committee or Member's Congressional Website and the Congressional Record.
- Should the project receive federal funding, I agree to disclose whether I hired a lobby firm; if so, the name of the lobby firm; and how much was paid to advocate for this project.

PROJECT NAME: Hydrogen Fueling using the HYDRNOL Hydrogen Liquid Carrier

NAME OF PERSON CERTIFYING: Barton F. Norton

TITLE OF PERSON CERTIFYING: Director of Marketing

LEGAL NAME OF ENTITY MAKING REQUEST: Asemblon, Inc.

LEGAL ADDRESS OF ENTITY MAKING REQUEST: 15340 NE 92nd Street, Suite B, Redmond, WA 98052-3521

SIGNATURE: **DATE:** 27 Mar 09

City of Bellevue
Office of the Mayor • Phone (425) 452-7810 • Fax (425) 452-7919
Post Office Box 90012 • Bellevue, Washington • 98009 9012

March 26, 2009

Mr. Patrick A. Quarles, CEO
ASEMBLON, Inc.
15340 NE 92nd Street
Suite B
Redmond, WA 98052-3521

RE: Appropriation request to Congressman Reichert

Dear Pat,

I was gratified to hear both about your upcoming move to Bellevue and your progress in making economical hydrogen for transportation a reality.

Your plan to include a school bus in your demonstration project with the Bellevue School District was particularly interesting, and we look forward to finding ways that we can support one another in this project. The City of Bellevue's own vehicle fleet could be a recipient of this new clean air hydrogen technology.

We understand that you will be building products in Bellevue that will have both national and international markets. Bellevue is pleased that this new technology will come from our city. We are also pleased that this program will add jobs in this challenging economy, and having them be "Green" jobs is especially welcomed.

With the Bellevue community as an end user of your technology, we support both your appropriation request as well as your goal of cleaner air and improved health for our children.

I wish you the best in your endeavors and appreciate this opportunity to lend our support. Please let us know how the City can further help in your efforts

Sincerely

Grant S. Degginger
Mayor

CC: The Honorable Dave Reichert, Member of Congress
Bellevue City Council
Steve Sarkozy, Bellevue City Manager

	HYDRNOL™ Fueling Station	Qty	Price	Extension	Total	Purchased Equip.
	20-Foot Shipping Container					
	Design and Development Charges	1	10,000	10,000		
E	Fabrication to Specification	2	8,500	17,000		17,000
	Painting and Graphics	2	3,500	7,000		
	Shipment	2	1,200	2,400		
	Site Preparation	2	6,500	13,000		
	Regulatory, Inspection, Fire Marshall	2	4,500	9,000		
					58,400	17,000
	Fuel Bladders					
	Design and Development	1	12,500	12,500		
RFQ	Prototypes	4	6,500	26,000		
	Testing to Destruction for Pressure	4	3,000	12,000		
	Redesign	1	5,000	5,000		
	Production Bladders	8	5,500	44,000		
	Installation and Testing	2	4,000	8,000		
	Lifetime Cycle Testing (600 fill cycles)	2	12,500	25,000		
					132,500	0
	Fueling Pumps					
	Design and Development	1	12,500	12,500		
E	Prototypes	4	15,000	60,000		60,000
	Testing	2	7,500	15,000		
	Redesign	1	5,000	5,000		
	Production Modifications	6	3,500	21,000		
	Testing	1	8,000	8,000		
	Human Factors	1	7,500	7,500		
	Regulatory, Inspection, Fire Marshall	1	6,000	6,000		
	Lifetime Cycle Testing (40,000 fills)	2	15,000	30,000		
					165,000	60,000
	Battery Back-up Power System and Conditioner					
	Design and Development	1	7,500	7,500		
E	RFQ Purchased Parts (batteries, inverter)	2	37,800	75,600		75,600
	Installation	2	6,500	13,000		
	Testing	2	5,000	10,000		
	Production Modifications	2	3,500	7,000		
	Certification	1	8,000	8,000		
	Regulatory, Inspection, Fire Marshall	1	7,500	7,500		
					128,600	75,600
	Renewable Energy Power System					
	Design and Development	1	5,500	5,500		
E	RFQ Purchased Parts (3kW solar, 4 kW win	2	32,500	65,000		65,000
	Installation	2	7,500	15,000		
	Testing	2	4,500	9,000		
	Production Modifications	2	3,500	7,000		
	Certification	1	10,000	10,000		
	Regulatory, Inspection, Fire Marshall	1	5,500	5,500		
					117,000	65,000

		HYDRNOL™ Fueling Station	Qty	Price	Extension	Total	Purchased Equip.
		Self-Contained Security System					
		Design and Development	1	7,500	7,500		
E	RFQ	Purchased Parts (lighting, video, moti	2	20,000	40,000		40,000
		Installation	2	5,000	10,000		
		Testing	2	4,500	9,000		
		Production Modifications	2	3,500	7,000		
		Certification	1	5,000	5,000		
		Regulatory, Inspection, Fire Marshall	1	6,500	6,500		
						85,000	40,000
		Roll-back Truck for Statewide Demonstrations					
		Design and Development	1	7,500	7,500		
E	RFQ	Purchased Parts (truck body + roll-ba	1	46,000	46,000		46,000
		Testing	2	4,500	9,000		
		Production Modifications	2	3,500	7,000		
						69,500	46,000
		Sub-total Hydrogen Fueling Station				756,000	303,600

		HYDRNOL™Conversion and Compression I	Qty	Price	Extension	Total	Purchased Equip.
		20-Foot Shipping Container					
		Design and Development Charges	1	15,000	15,000		
		Fabrication to Specification	1	8,500	8,500		
		Painting and Graphics	1	3,500	3,500		
		Shipment	1	1,200	1,200		
	ND	Site Preparation	1	85,000	85,000		
		Regulatory, Inspection, Fire Marshall	1	10,000	10,000		
						123,200	0
		Triple-stage Compressors					
		Design and Development	1	12,500	12,500		
E	QTE	Triple-stage Compressor to 12,000 ps	1	185,000	185,000		185,000
E		Plumbing, Valves, Controls	1	90,000	90,000		90,000
		Testing	1	12,500	12,500		
		Certification	1	10,000	10,000		
		Regulatory, Inspection, Fire Marshall	1	10,000	10,000		
						320,000	275,000
		Hydrogen Storage Tanks (12,000 psig)					
		Design and Development	1	9,500	9,500		
E		Prototypes	2	30,000	60,000		60,000
		Testing	1	7,500	7,500		
		Regulatory, Inspection, Fire Marshall	1	10,000	10,000		
						87,000	60,000
		Hydrogen Dispensers (5,000 + 10,000 psig)					
		Design and Development	1	7,500	7,500		
E		Purchased Parts	1	90,000	90,000		90,000
		Installation	1	6,500	6,500		
		Testing	1	5,000	5,000		
		Production Modifications	1	3,500	3,500		
		Certification	1	8,000	8,000		
		Regulatory, Inspection, Fire Marshall	1	7,500	7,500		
						128,000	90,000

Purchased

	HYDRNOL™Conversion and Compression l	Qty	Price	Extension	Total	Equip.
	Self-Contained Security System					
	Design and Development	1	6,000	6,000		
E	RFQ Purchased Parts (lighting, video, moti	1	20,000	20,000		20,000
	Installation	1	6,000	6,000		
	Testing	1	4,500	4,500		
	Production Modifications	1	3,500	3,500		
	Certification	1	5,000	5,000		
	Regulatory, Inspection, Fire Marshall	1	4,500	4,500		
					49,500	20,000
	Roll-back Truck for Statewide Demonstrations					
	Design and Development	1	3,000	3,000		
E	RFQ Purchased Parts (truck body + roll-ba	1	46,000	46,000		46,000
	Testing	1	4,500	4,500		
	Production Modifications	1	3,500	3,500		
					57,000	46,000
	Sub-total HYDRNOL Conversion and Compression Unit				764,700	491,000

	HYDRNOL Fuel Delivery and Vehicle Mods	Qty	Price	Extension	Total	Purchased Equip.
	Fuel Delivery Truck					
E	RFQ Truck Works Incorporated Custom	1	80,000	80,000		80,000
	Pillow Tanks	3	8,500	25,500		
	Testing	1	5,000	5,000		
	Modification	1	4,500	4,500		
					115,000	80,000
	HYDRNOL Retrofit Kit for Cars and Light Trucks					
	Design	1	50,000	50,000		
E	Prototypes	4	15,000	60,000		60,000
	Modification	1	5,000	5,000		
	Testing	1	5,000	5,000		
	Pre-production	4	10,000	40,000		
	Testing	1	5,000	5,000		
	Modification	1	7,500	7,500		
E	Production	10	7,500	75,000		75,000
					247,500	135,000
	Bellevue School Bus Modifications					
	Design and Fabrication of Storage Tar	1	5,500	5,500		
	Installation of HYDRNOL Retrofit Kit	1	4,000	4,000		
	Engine/Air Cleaner Modifications	8	4,000	32,000		
	Computer Ignition Timing Modificatior	1	5,000	5,000		
	Testing	1	5,000	5,000		
					51,500	0
	North Dakota Chevrolet Silverado Truck					
ND	Delivery of Silverado from North Dako	1	2,500	2,500		
	Design and Fabrication of Storage Tar	1	8,500	8,500		
	Installation of HYDRNOL Retrofit Kit	1	4,000	4,000		
	Injector Modifications	8	4,000	32,000		
	Computer Ignition Timing Modificatior	1	5,000	5,000		
	Testing	1	5,000	5,000		
					57,000	0

HYDRNOL Fuel Delivery and Vehicle Mods	Qty	Price	Extension	Total	Purchased Equip.

1988 Corvette Modifications

Design and Fabrication of Storage Tar	1	5,500	5,500		
Installation of HYDRNOL Retrofit Kit	1	4,000	4,000		
Injector Modifications	8	4,000	32,000		
Computer Ignition Timing Modificatior	1	5,000	5,000		
Testing	1	5,000	5,000		
				51,500	0
Sub-total HYDRNOL Fuel Delivery and Vehicle Mods				522,500	215,000

FY10 Project Request Summary DOE EERE Asemblon, Inc.		**Total**	**Purchased Equip.**
HYDRNOL Fueling Station		756,000	303,600
HYDRNOL Conversion and Compression Unit		764,700	491,000
HYDRNOL Fuel Delivery and Vehicle Mods		522,500	215,000
Total		######	######
Overhead	30.0%	612,960	
Travel + Living		24,000	
Grand Total		######	
"In-kind" Contributions			
Design + Developmer		40,000	
Overhead Expenses		612,960	
Travel + Living		24,000	
Total "In-kind"		676,960	
Net Grant Request		######	25.3%

GENERAL INFORMATION		
Organization making request: Asemblon, Inc.		**Federal Tax Status: (i.e. 501(c)3) C Corporation**
Address: 15340 NE 92nd Street, Suite B		
City: Redmond	**State: WA**	**ZIP Code: 98052**
Point of Contact(POC): Bart Norton		
Phone: 425-558-5100 X 605		**Email: bnorton@asemblon.com**
Address: 15340 NE 92nd Street, Suite B		
City: Redmond	**State: WA**	**ZIP Code: 98052-3521**
DC Representation (if any): None		
Phone:		**Email:**
Address:		
City:	**State:**	**ZIP Code:**

PROJECT/PROGRAM INFORMATION

PROJECT TITLE: Demonstration of hydrogen fueling using the HYDRNOL liquid hydrogen carrier

Prioritized: ___1___ of ___1___ total requests for your organization

Appropriations Bill: (Please check)

_____Agriculture	_____Commerce, Justice, Science	_____Defense
__X___Energy and Water	_____Interior and Environment	
_____State, Foreign Operations	_____Labor, Heath and Human Services, and Education	
_____Military Construction, Veterans' Administration	_____Homeland Security	
_____Transportation, Housing and Urban Development	_____Financial Services	
_____Legislative Branch		

Agency/Bureau (i.e. FBI; Corps of Engineers; US Navy; ARS, etc.): Department of Energy (DOE)

Account (i.e. Buildings and Facilities, Aviation Safety; Capital Improvements, etc): Energy Efficiency and Renewable Energy (EERE), Hydrogen, Fuel Cells and Infrastructure Technologies Program

Amount requested for FY2010: $ October 2009 to September 2010 $1,587,000

Total cost of project: $ 2,003,200

Minimum amount of FY2010 funding needed to begin or sustain this project: $ 982,000

Is this program authorized? ___YES __X__NO	If YES, bill number: Year:
Is this program funded in the President's FY10 budget request? ____YES _X_ NO	If YES, amount: $

Anticipated total future requests: $ 1,000,000 Over the next 2 years

Local, state and/or private funding sources: None

Total Amount: $ Over the next years

Other sources of Federal funding:

Total Amount: $ None Over the next years

Federal Agency Sponsor or Program Manager:

Office:

Phone Number:

Executive Summary/Project Description (MAXIMUM 200 Words):

- Please include a discussion of the project's merits, relevance, eligibility, and why it is a valuable use of taxpayer funds.
- Please limit your description to 200 words.
- You may attach additional information, however, please understand that the description provided below will be used for any and all public disclosure requirements.

We have developed a molecular carrier technology that allows hydrogen to be transported, stored and dispensed in liquid form at ambient temperature and pressure. This will allow the use of the currently available gasoline infrastructure to dispense hydrogen which will then be released on demand for automotive combustion. Existing internal combustion engines can be economically retrofitted for this purpose. With the requested funding we will fully demonstrate all aspects of this process. The ability to incorporate hydrogen into our National Energy schema has been impeded by the cost to store and transport it in refrigerated and pressurized form. We have overcome this obstacle. Our analysis shows that we can install hydrogen stations at ~ $1/10^{th}$ the cost of conventional hydrogen systems thereby accelerating hydrogen adoption, more rapidly reducing our dependence on foreign oil, and reducing CO_2 emissions on a 1:1 basis as we reduce hydrocarbon combustion.

Our technology can store energy produced by renewable energy sources that do not have access to transmission lines. Conversion of this energy output to hydrogen, attached to the HYDRNOL molecule, will allow the energy to be inexpensively transported to the appropriate locations and stored until such time as power demand requires its use.

Justification of funding:

- How does this request fit within the identified bill and account (cite specific precedents and overall purpose of account)?

From the EWERE Web Site: On-board hydrogen storage for transportation applications continues to be one of the most technically challenging barriers to the widespread commercialization of hydrogen-fueled vehicles. The EERE hydrogen storage activity focuses primarily on the applied research and development (R&D) of low-pressure, materials-based technologies to allow for a driving range of more than 300 miles (500 km) while meeting packaging, cost, safety, and performance requirements to be competitive with current vehicles.

- How many jobs could this project create and how will it benefit Washington's 8^{th} Congressional District?

By 2015, the projected number of "green collar" jobs produced by this project will be 1,139 in the 8^{th} Congressional District alone. Producing the Retrofit Kits for cars and light trucks will employ an additional 4,275 workers but those jobs are likely to be in States with large suppliers to the automotive industry. Typically, 4 times as many jobs are created as induced or indirect jobs. This would boost the job total in 2015 to 21,656.

Specific language proposed for Congressman's request to the subcommittee (if any):

HYDRNOL is a transitional technology that will allow us to accelerate our entry into the Hydrogen Economy. It will allow our Country to make great strides in reducing our CO_2 emissions and will help us to capture the energy produced by remote renewables such as wind and solar without the time and expense of constructing transmission lines and other costly energy transport mechanisms.

Is there any other relevant information regarding this request that you would like to share?

The science is proven. Our objective is to demonstrate a full use cycle and scalability from laboratory to commercial level.

Because of the green nature of this project, it will have very high visibility. Asemblon would plan to promote the Hydrogen Fueling Station and our hydrogen-powered vehicles at State and local fairs and alternative energy events by actually taking the Station to these events.

CONTINUE FOR DEFENSE REQUEST ONLY:

What is the name and number of the Program Officer for this request?

Have you contacted the Program Officer?

Appropriations Account: (Please check)

_____RDT&E _____Procurement _____O&M _____Counter Drugs _____Medical

_____Reserve Equipment _____National Guard Equipment _____Other (DW, for example)

Service: (Please check)

_____Army _____Army Reserve _____Navy _____Navy Reserve _____Marine Corps _____Marine Corps Reserve

_____Air Force _____Air Force Reserve _____Intelligence _____Army Guard _____Air National Guard

Line Item Title:

Identification:

R-1/PE # _____ P-1/Line # _____ TIARA/JMIP (Intel Only) _____

Sub-Activity Group (required for Personnel and O&M):

ASEMBLON, Inc.
Hydrogen Service Station

Two Models of the Service Station

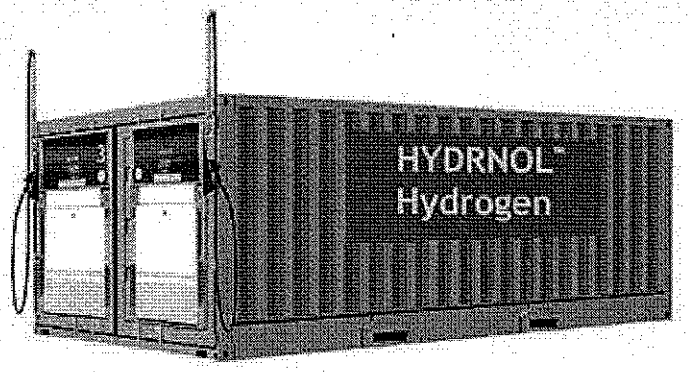
Asemblon offers two different models of the Hydrogen Service Station for USA and International Markets. Since the design is based on the ITA International Standard for 20-foot containers, these Stations can be shipped complete via truck, container ship or intermodal rail.

The Service Station is shipped with the pumps and masts inside the container for final assembly on site. Electrical requirement is 220/240 VAC 50/60 Hz 20 amps. Asemblon also offers a Renewable Energy Option to allow the Hydrogen Service Station to be independent of grid power. The Option is pictured on Page 1 and consists of 3 kW of PV Solar and 4 kW of wind power (4 X 1 kW turbines). A 10 kWhr storage battery and inverter are included.

Model HSS-SP Hydrogen Service Station Single Pump

Model HSS-DP Hydrogen Service Station Dual Pump

Model HSS-RE Renewable Energy Option



Hydrogen Service Station with Dual Pumping Option

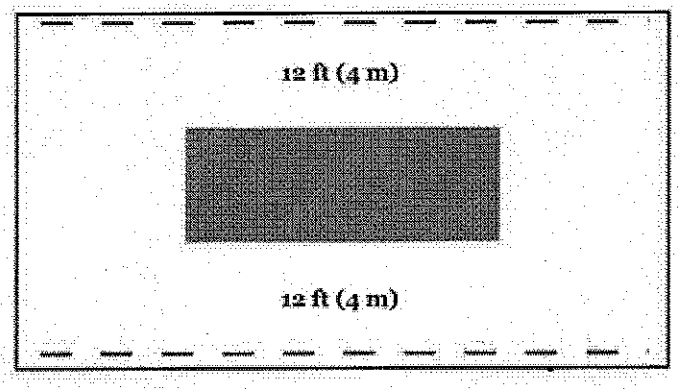
Inside Dimensions and Weights

Inside Length	19' 4"	5.89 m
Inside Width	7' 8"	2.33 m
Inside Height	7' 10"	2.38 m
Door Width	7' 8"	2.33 m
Door Height	7' 6"	2.28 m
Capacity	1,172 ft³	33.18 m³
Tare (Empty) Weight	4,916 lb	2,229 kg
Maximum Cargo	47,999 lb	21,727 kg

Site Design Considerations

In designing a site for the Service Station, it is recommended that lanes 12 feet (4 m) be allowed on each side of the Station for access to the pump(s) for customer vehicles. For refueling, plan on turning paths for up to a 42-foot tandem tube trailer.

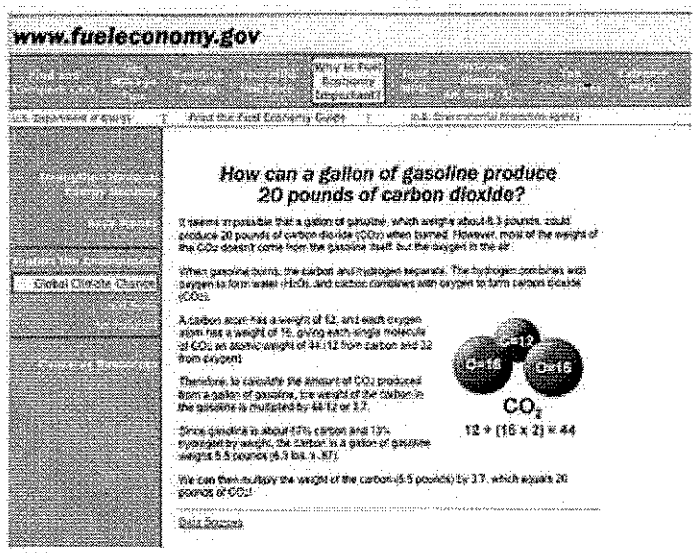
The Hydrogen Service Station is delivered on a special truck with a roll-back bed. Allow 40 feet in front of the Station for delivery.



Reducing Your Carbon Footprint

The US Department of Energy Web Site explains how each gallon of gasoline burned produces 20.37 pounds of CO_2. Using hydrogen fuel reduces the CO_2 ouput of the same engine by 99.7% in tests by the Ford Motor Company.

Hydrogen made from methane still provides a net CO_2 reduction of 10.2 pounds per kilogram of hydrogen.


www.fueleconomy.gov

How can a gallon of gasoline produce 20 pounds of carbon dioxide?

It seems impossible that a gallon of gasoline, which weighs about 6.3 pounds, could produce 20 pounds of carbon dioxide (CO_2) when burned. However, most of the weight of the CO_2 doesn't come from the gasoline itself, but the oxygen in the air.

When gasoline burns, the carbon and hydrogen separate. The hydrogen combines with oxygen to form water (H_2O), and carbon combines with oxygen to form carbon dioxide (CO_2).

A carbon atom has a weight of 12, and each oxygen atom has a weight of 16, giving each single molecule of CO_2 an atomic weight of 44 (12 from carbon and 32 from oxygen).

Therefore, to calculate the amount of CO_2 produced from a gallon of gasoline, the weight of the carbon in the gasoline is multiplied by 44/12 or 3.7.

Since gasoline is about 87% carbon and 13% hydrogen by weight, the carbon in a gallon of gasoline weighs 5.5 pounds (6.3 lbs. x .87).

We can then multiply the weight of the carbon (5.5 pounds) by 3.7, which equals 20 pounds of CO_2!

ASEMBLON®
15340 NE 92nd Street, Suite B, Redmond, WA 98052-3521 TEL: 425.558.5100 FAX: 425.869.1836
www.asemblon.com Prices and specifications subject to change without notice

ASEMBLON, Inc.
Hydrogen Service Station

Patented Liquid Carrier for Hydrogen
Asemblon introduces its Hydrogen Fueling Station based on its patented HYDRNOL™ Carrier molecule. HYDRNOL safely stores hydrogen at standard temperature and pressure by chemically binding hydrogen to the HYDRNOL Carrier.

Safely Store 1,000 Kilograms of Hydrogen
The Hydrogen Service Station stores 1,000 kilograms of hydrogen in a standard 20-foot shipping container for safe delivery to modified cars or light trucks. HYDRNOL Conversion Kits on board the vehicles release hydrogen as needed for internal combustion engines or fuel cells. The expended chemical is captured on board for recycling.

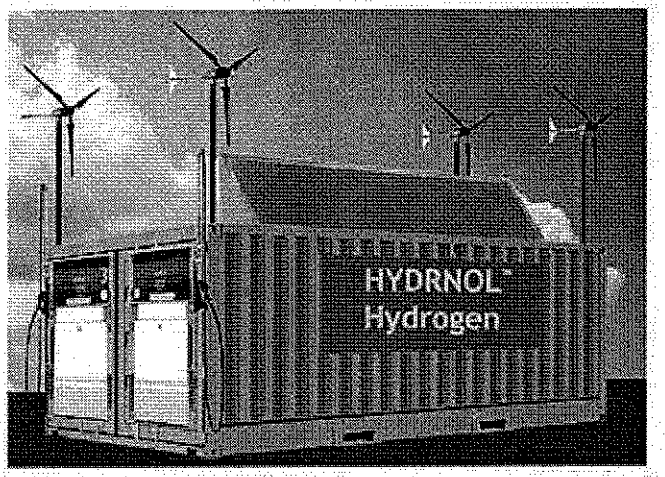
HYDRNOL is Recyclable
When refueling, fresh HYDRNOL is pumped in while expended HYDRNOL is pumped out for recycling. The HYDRNOL molecule can be recycled over 100 times by simply adding fresh hydrogen at a processing facility.

Stores Enough Hydrogen for 100 Fillings
Over 100 vehicles can be refueled before the HYDRNOL Service Station needs to be refilled and the expended HYDRNOL picked up for rehydrogenation.

Installs in Less than a Day
All that is required to operate the Hydrogen Service Station is a prepared pad and 220/240 VAC power. The Station uses a built-in cellular telephone for credit card checking and status reporting.

Designed to be as Safe as Gasoline or Diesel
The HYDRNOL Service Station has been designed to fit seamlessly into urban fueling situations with safety ratings similar to gasoline and diesel. There is no "free" hydrogen until it is released on board the vehicle.

Cars and Light Trucks Can Run on Hydrogen
The benefits of driving with hydrogen fuel do not have to wait for fuel cells. Today's engines are just as efficient running on hydrogen as they are on gasoline but with 99.7% less CO_2 emissions (Ford Motor Company data). Engines designed from the ground up to run on hydrogen are actually competitive with fuel cells for energy efficiency.



Hydrogen Service Station with Dual Pumping Option and the Renewable Wind and Solar Energy Option

Major Price Breakthrough for Hydrogen
Hydrogen delivered on the HYDRNOL molecule is expected to cost $2.28 per kilogram (energy equivalent to a gallon of gasoline). This price does not include incentives, rebates or price supports.

Reduce Your Carbon Footprint by 2.5 Tons!
Every time you fill up with HYDRNOL, you prevent the release of 100 pounds of CO_2 . The Department of Energy reports burning 1 gallon of gasoline puts 20.37 pounds of CO_2 into the atmosphere. Driving an average of 15,000 miles in a year, you will save 2.5 tons of CO_2!

Get More Information
Visit our Web Site at www.asemblon.com/energy. Check out the Frequently Asked Questions (FAQ) section.

USA and International Inquiries Invited
Asemblon offers plans for fuel suppliers, automobile dealers and vehicle retrofitters that make it easy to get started. A Hydrogen Fueling Station will support 100 to 250 modified internal combustion or fuel cell vehicles.

Contact Asemblon for Partnership Opportunities
Asemblon is a technology company. We license and sub-contract our patents and designs for chemicals, fueling stations, retrofit kits, and rehydrogenation facilities.

Contact Michael Ramage (mramage@asemblon.com) or by cell phone at 206.200.7801.

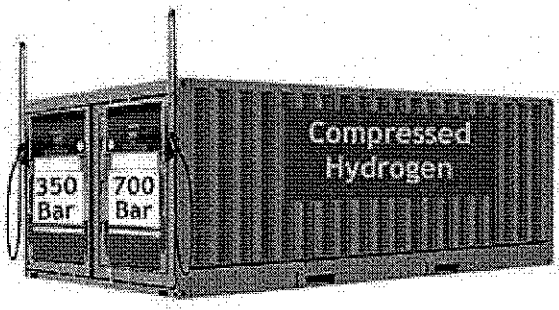
ASEMBLON®
15340 NE 92nd Street, Suite B, Redmond, WA 98052-3521 TEL: 425.558.5100 FAX: 425.869.1836
www.asemblon.com Prices and specifications subject to change without notice.

ASEMBLON, Inc.
Conversion and Compression Unit

Hydrogen Service Station Add-on
The Asemblon Conversion and Compression Unit has been designed to add compressed hydrogen fueling to the Hydrogen Service Station. The Unit offers pressures of 350 and 700 bar. Since the design is based on the ITA International Standard for 20-foot containers, the Conversion and Compression Unit can be shipped complete via truck, container ship or intermodal rail.

The Conversion and Compression Unit is shipped with the dispensers and masts inside the container for final assembly on site. Electrical requirements are 440/480 VAC 50/60Hz 20 amps.

Model HSS-CCU Conversion and Compression Unit



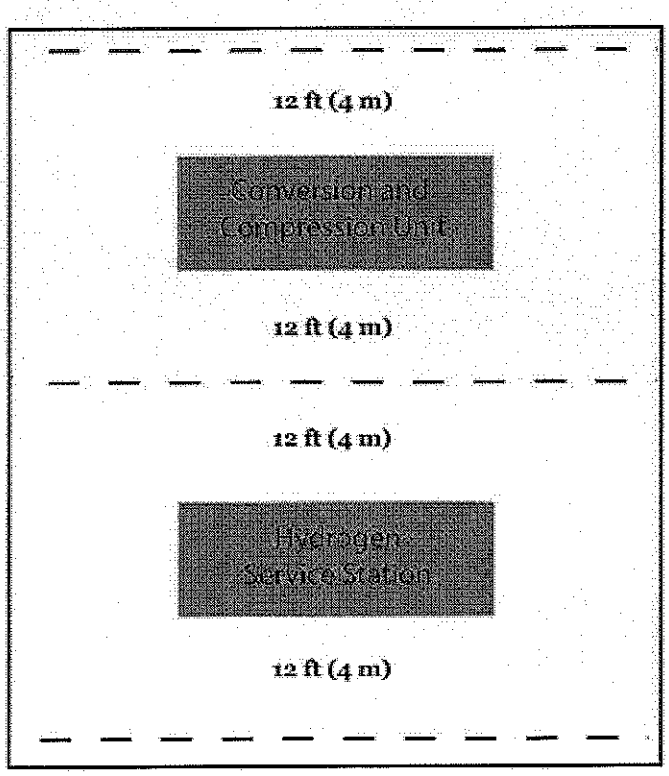
Conversion and Compression Unit with Dual Pressure Output

Inside Dimensions and Weights

Inside Length	19' 4"	5.89 m
Inside Width	7' 8"	2.33 m
Inside Height	7' 10"	2.38 m
Door Width	7' 8"	2.33 m
Door Height	7' 6"	2.28 m
Capacity	1,172 ft³	33.18 m³
Tare (Empty) Weight	4,916 lb	2,229 kg
Maximum Cargo	47,999 lb	21,727 kg

Site Design Considerations
In designing a site for the Service Station, it is recommended that lanes 12 feet (4 m) be allowed on each side of the Station for access to the pump(s) for customer vehicles. For refueling the Hydrogen Service Station, plan on turning paths for up to a 42-foot tandem tube trailer.

The Conversion and Compression Unit is delivered on a special truck with a roll-back bed. Allow 40 feet in front of the Unit for delivery.



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ASEMBLON, Inc.
Conversion and Compression Unit

Companion Unit for the Hydrogen Service Station
Asemblon offers an add-on Unit to complement its Hydrogen Fueling Station based on its patented HYDRNOL™ Carrier molecule. HYDRNOL safely stores hydrogen at standard temperature and pressure by chemically binding hydrogen to the HYDRNOL Carrier.

Safely Store 1,000 Kilograms of Hydrogen
The Hydrogen Service Station stores 1,000 kilograms of hydrogen in a standard 20-foot shipping container for safe delivery to modified cars or light trucks. HYDRNOL Conversion Kits on board the vehicles release hydrogen as needed for internal combustion engines or fuel cells. The expended chemical is captured on board for recycling.

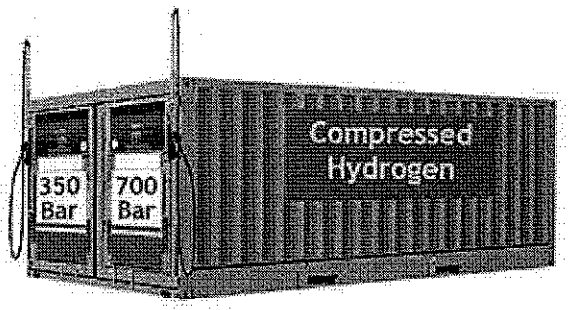
Allows Fueling of Compressed Hydrogen Vehicles
HYDRNOL is pumped from the Hydrogen Service Station to the Conversion and Compression Unit where hydrogen is released and compressed to 10,000 psi (700 bar) and stored in tanks designed to fill 10 vehicles with up to 10 kilograms of hydrogen each.

Pressures of 350 or 700 Bar are Available
Vehicles requiring 5,000 psi (350 bar) or 10,000 psi (700 bar) can be refueled. Separate dispensers are available for each pressure.

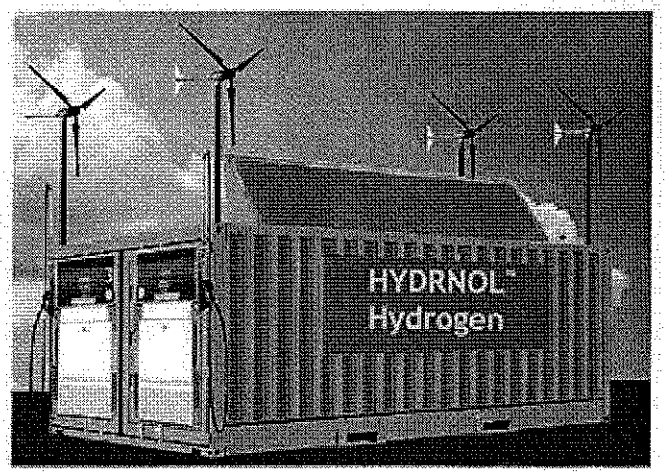
Installs in Less than a Day
All that is required to operate the Conversion and Compression Unit is a prepared pad and 440/480 VAC power. The Station uses a built-in cellular telephone for credit card checking and status reporting.

Designed to Improve Safety
The HYDRNOL Service Station is used to store hydrogen bound to an organic molecule to minimize the quantity of "free" hydrogen in the system. Using this technique, only 10% of the total hydrogen available is in gaseous form at any time (100 kg of 1,000 kg total capacity).

Renewable Energy Option can Supplement Power
A popular addition to the Hydrogen Service Station is the Renewable Energy Option. This allows the Station to run completely independently of the grid. Compressing hydrogen requires more power than can be economically stored with batteries. However, the Renewable Energy Option will allow the hydrogen already compressed to be delivered during a power outage.



Conversion + Compression Unit with Dual Pressure Output



Hydrogen Service Station with Dual Pumping Option and the Renewable Energy Option

To Get More Information
First review the Hyrdogen Service Station Flyer. Next, visit our Web Site at www.asemblon.com/energy.

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United States Department of Energy

ENERGY INNOVATOR

This award is presented to:

Asemblon, Inc.

In recognition of your outstanding effort demonstrated in the deployment of energy efficient or renewable energy services or technologies.

Paul Dickerson,
Chief Operating Officer
Energy Efficiency and Renewable Energy

November, 2008
Date